

**In the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

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1. – 3. (Cancelled)

4. (Currently amended) A thin film magnetic head according to Claim ~~[[4]]~~ 30, wherein the Young's modulus  $E$  of the gap layer is  $E \geq 127.4$  (GPa).

5. (Currently amended) A thin film magnetic head according to Claim ~~[[4]]~~ 29, wherein the atomic ratio of N of the SiON film is  $1 \text{ (at\%)} \leq N \text{ atomic \%} \leq 6 \text{ (at\%)}$ .

6. (Withdrawn) A thin film magnetic head comprising:  
an insulating gap layer between cores made of a magnetic material;  
and  
a coil for inducing a recording magnetic field in the cores,  
wherein the gap layer comprises a  $\text{SiO}_2$  film, and  
wherein the Young's modulus  $E$  of the gap layer is  $E > 123.2$  (GPa).

7. (Withdrawn) A thin film magnetic head according to Claim 6, wherein the Young's modulus  $E$  of the gap layer is  $E \geq 127.4$  (GPa).

8. (Currently amended) A thin film magnetic head comprising:

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a magnetoresistive element capable of detecting a recording signal due to a change in electric resistance with an external magnetic field; and shield layers formed above and below the magnetoresistive element with gap layers provided therebetween, wherein the cores have a facing surface, ~~wherein the amount of protrusion of at least one of the gap layers from the facing surface is less than or equal to about 3.5 nm, and~~ wherein at least one of the gap layers comprises a SiON film having a Young's modulus E where  $E > 123.2$  (GPa).

9. (Cancelled)

10. (Previously presented) A thin film magnetic head according to Claim 8, wherein the atomic ratio of N of the SiON film is  $0 \text{ (at\%)} < N \text{ atomic \%} \leq 6 \text{ (at\%)}$ .

11. (Currently amended) A thin film magnetic head according to Claim 8, wherein the Young's modulus E of the at least one gap layer is  $E \geq 127.4$  (GPa).

12. (Previously presented) A thin film magnetic head according to Claim 11, wherein the atomic ratio of N of the SiON film is  $1 \text{ (at\%)} \leq N \text{ atomic \%} \leq 6 \text{ (at\%)}$ .

13. (Withdrawn) A thin film magnetic head comprising:

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a magnetoresistive element capable of detecting a recording signal due to a change in electric resistance with an external magnetic field; and shield layers formed above and below the magnetoresistive element with gap layers provided therebetween, wherein at least one of the gap layers comprises a  $\text{SiO}_2$  film, and wherein the Young's modulus  $E$  of at least one of the gap layers is  $E > 123.2$  (GPa).

14. (Withdrawn) A thin film magnetic head according to Claim 13, wherein the Young's modulus  $E$  of at least one of the gap layers is  $E \geq 127.4$  (GPa).

15. (Withdrawn) A method of manufacturing a thin film magnetic head comprising:  
arranging a target and a substrate opposite to the target in a deposition apparatus; and  
forming a gap layer of the thin film magnetic head,  
wherein in forming the gap layer, a target composed of  $\text{SiO}_2$  is prepared, and then sputtered with  $\text{N}_2$  gas used as a sputtering gas flowing into the apparatus to form the gap layer comprising a  $\text{SiON}$  film.

16. (Withdrawn) A method of manufacturing a thin film magnetic head according to Claim 15, wherein the flow rate ratio of the  $\text{N}_2$  gas in the sputtering gas is  $0\% < \text{flow rate ratio of } \text{N}_2 \text{ gas} \leq 30\%$ .

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17. (Withdrawn) A method of manufacturing a thin film magnetic head according to Claim 16, wherein the flow rate ratio of the N<sub>2</sub> gas is preferably in the range of  $5\% \leq \text{flow rate ratio of N}_2 \text{ gas} \leq 30\%$ .

18. (Withdrawn) A method of manufacturing a thin film magnetic head according to Claim 15, wherein forming the gap layer, comprises supplying a bias electric power to the substrate side.

19. (Withdrawn) A method of manufacturing a thin film magnetic head comprising:

arranging a target and a substrate opposite to the target in a deposition apparatus; and

forming a gap layer of the thin film magnetic head,

wherein in forming the gap layer, the target composed of SiO<sub>2</sub> is prepared and then sputtered with the bias electric power supplied to the substrate to form the gap layer comprising a SiO<sub>2</sub> film having a Young's modulus E of  $E > 123.2 \text{ (GPa)}$ .

20. (Withdrawn) A method of manufacturing a thin film magnetic head according to Claim 19, wherein the bias electric power is equal to or greater than 10 W.

21. (Cancelled)

22. (Currently amended) A thin film magnetic head according to claim ~~[[4]]~~ 35, wherein the amount of protrusion at least one of the gap layers from the facing surface is less than or equal to about 3 nm.

23. – 28. (Cancelled)

29. (Previously presented) A thin film magnetic head comprising:  
a gap layer provided between cores made of a magnetic material;  
and  
a coil for inducing a recording magnetic field in the cores,  
wherein the gap layer comprises a SiON film, the atomic ratio of N  
of the SiON film being  $0 \text{ (at\%)} < \text{N atomic \%} \leq 6 \text{ (at\%)}$ .

30. (Previously presented) A thin film magnetic head according to  
Claim 29, wherein the Young's modulus E of the gap layer is  $E > 123.2 \text{ (GPa)}$ .

31. – 34. (Cancelled)

35. (New) A thin film magnetic head comprising:  
a gap layer provided between cores made of a magnetic material;  
and  
a coil for inducing a recording magnetic field in the cores,  
wherein the gap layer is a film comprising at least silicon and  
oxygen, the gap layer having a Young's modulus E where  $E > 123.2 \text{ (GPa)}$ .

36. (New) A thin film magnetic head according to Claim 35, wherein the  
Young's modulus E of at least one of the gap layers is  $E \geq 127.4 \text{ (GPa)}$ .

37. (New) A thin film magnetic head according to Claim 35, wherein the atomic ratio of N of the SiON film is  $0 \text{ (at\%)} < \text{N atomic \%} \leq 6 \text{ (at\%)}$ .

38. (New) A thin film magnetic head according to Claim 36, wherein the atomic ratio of N of the SiON film is  $1 \text{ (at\%)} \leq \text{N atomic \%} \leq 6 \text{ (at\%)}$ .

39. (New) A thin film magnetic head comprising:  
a magnetoresistive element capable of detecting a recording signal due to a change in electric resistance with an external magnetic field; and  
shield layers formed above and below the magnetoresistive element with gap layers provided therebetween,  
wherein at least one of the gap layers comprises a  $\text{SiO}_2$  film, and  
wherein the atomic ratio of N of the SiON film is  $0 \text{ (at\%)} < \text{N atomic \%} \leq 6 \text{ (at\%)}$ .

40. (New) A thin film magnetic head according to Claim 39, wherein the Young's modulus E of at least one of the gap layers is  $E \geq 127.4 \text{ (GPa)}$ .

41. (New) A thin film magnetic head according to Claim 39, wherein the Young's modulus E of at least one of the gap layers is  $E > 123.2 \text{ (GPa)}$ .

42. (New) A thin film magnetic head according to Claim 40, wherein the atomic ratio of N of the SiON film is  $1 \text{ (at\%)} \leq \text{N atomic \%} \leq 6 \text{ (at\%)}$ .

43. (New) A thin film magnetic head comprising:

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and

an insulating gap layer between cores made of a magnetic material;

a coil for inducing a recording magnetic field in the cores,  
wherein the gap layer is a film comprising silicon and oxygen, and  
wherein the Young's modulus  $E$  of the gap layer is  $E > 123.2$

(GPa).

44. (New) A thin film magnetic head comprising:

a magnetoresistive element capable of detecting a recording signal  
due to a change in electric resistance with an external magnetic field; and  
shield layers formed above and below the magnetoresistive  
element with gap layers provided therebetween,  
wherein the cores have a facing surface,  
wherein at least one of the gap layers is a film comprising silicon  
and oxygen having a Young's modulus  $E$  where  $E > 123.2$  (GPa).

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